APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/573,153	03/23/2006	Zhan Cui	36-1978	6584

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EXAMINER
REYES, MARIELA D

ART UNIT	PAPER NUMBER
2167	

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Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

	Application No.	Applicant(s)
Office Action Summary	10/573,153	CUI, ZHAN
	Examiner	Art Unit	
	Mariela D. Reyes	2167	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE <u>3</u> MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.
- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed
  after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
  Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any
  earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on <u>23 March 2006</u>.

2a)☐ This action is **FINAL**.   2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is
closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) <u>1-17</u> is/are pending in the application.

    4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) <u>1-17</u> is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☒ The specification is objected to by the Examiner.

10)☒ The drawing(s) filed on <u>23 March 2006</u> is/are: a)☒ accepted or b)☐ objected to by the Examiner.

    Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

    Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

    a)☐ All   b)☐ Some *   c)☐ None of:

      1.☒ Certified copies of the priority documents have been received.

      2.☐ Certified copies of the priority documents have been received in Application No. _____.

      3.☐ Copies of the certified copies of the priority documents have been received in this National Stage
application from the International Bureau (PCT Rule 17.2(a)).

    * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)
1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☒ Information Disclosure Statement(s) (PTO/SB/08)
   Paper No(s)/Mail Date <u>08/15/2006</u>.

4) ☐ Interview Summary (PTO-413)
   Paper No(s)/Mail Date. _____ .
5) ☐ Notice of Informal Patent Application
6) ☐ Other: _____.

DETAILED ACTION

Priority

Receipt is acknowledged of papers submitted under 35 U.S.C. 119(a)-(d), which

papers have been placed of record in the file.

Specification

The abstract of the disclosure is objected to because the beginning of the

abstract first word is incomplete. Correction is required. See MPEP § 608.01(b).

Claim Rejections - 35 USC § 101

35 U.S.C. 101 reads as follows:

Whoever invents or discovers any new and useful process, machine, manufacture, or composition of matter, or any new and useful improvement thereof, may obtain a patent therefor, subject to the conditions and requirements of this title.

For the following 35 U.S.C 101 rejections refer to MPEP 2106.1 an excerpt of

which is presented here:

**I. FUNCTIONAL DESCRIPTIVE MATERIAL: "DATA STRUCTURES"
REPRESENTING DESCRIPTIVE MATERIAL *PER SE* OR COMPUTER
PROGRAMS REPRESENTING COMPUTER LISTINGS *PER SE***

Data structures not claimed as embodied in computer-readable media are descriptive
material *per se* and are not statutory because they are not capable of causing functional
change in the computer. See, e.g., *Warmerdam*, 33 F.3d at 1361, 31 USPQ2d at 1760
(claim to a data structure *per se* held nonstatutory). Such claimed data structures do not
define any structural and functional interrelationships between the data structure and other
claimed aspects of the invention which permit the data structure's functionality to be
realized. In contrast, a claimed computer-readable medium encoded with a data structure
defines structural and functional interrelationships between the data structure and the
computer software and hardware components which permit the data structure's
functionality to be realized, and is thus statutory.

Similarly, computer programs claimed as computer listings *per se*, i.e., the descriptions or
expressions of the programs, are not physical "things." They are neither computer
components nor statutory processes, as they are not "acts" being performed. Such
claimed computer programs do not define any structural and functional interrelationships
between the computer program and other claimed elements of a computer which permit
the computer program's functionality to be realized. In contrast, a claimed computer-
readable medium encoded with a computer program is a computer element which defines
structural and functional interrelationships between the computer program and the rest of
the computer which permit the computer program's functionality to be realized, and is
thus statutory. See *Lowry*, 32 F.3d at 1583-84, 32 USPQ2d at 1035. Accordingly, it is
important to distinguish claims that define descriptive material *per se* from claims that
define statutory inventions.

Claim 16 is rejected under 35 U.S.C. 101 because the claimed invention is

directed to non-statutory subject matter. The instant claims are read as software per se

because the system claims are missing functional hardware components for executing

the claim's limitations. Software per-se is non-descriptive material therefore it doesn't

fall into one of the statutory categories for patentability.

According to the interim guidelines that are part of MPEP 2106.1:

When nonfunctional descriptive material is recorded on some computer-readable
medium, in a computer or on an electromagnetic carrier signal, it is not statutory since
no requisite functionality is present to satisfy the practical application requirement.
Merely claiming nonfunctional descriptive material, i.e., abstract ideas, stored in a
computer-readable medium, in a computer, on an electromagnetic carrier signal does
not make it statutory. See Diehr, 450 U.S. at 185-86,209 USPQ at 8 (noting that the
claims for an algorithm in Benson were unpatentable as abstract ideas because "[t]he
sole practical application of the algorithm was in connection with the programming of a
general purpose computer.").

Claim 17 is rejected under 35 U.S.C. 101 because the claimed invention is

directed to non-statutory subject matter. The instant claim recites **"a computer carrier**

medium carrying the computer program" said wording appears to claim a carrier

wave, carrier waves are not considered statutory.

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all

obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set
> forth in section 102 of this title, if the differences between the subject matter sought to be patented and
> the prior art are such that the subject matter as a whole would have been obvious at the time the
> invention was made to a person having ordinary skill in the art to which said subject matter pertains.
> Patentability shall not be negatived by the manner in which the invention was made.

Claims 1-17 are rejected under 35 U.S.C. 103(a) as being unpatentable over Ng

et al (US Patent 6,360,223) in view of Bernstein et al (US PG Pub 2003/0120651).

With respect to independent claim 1:

Ng teaches:

A method of generating a computer readable data file representative of a

mapping or partial mapping between a first and a second representation of a set

of concepts and associated attributes, the method comprising the steps of:

Controlling a video display unit (user interface) **to display said first and**

second representations, or portions thereof, a to a user; (Column 3 Lines 11-14

and Fig. 7, discloses a user interface that displays data model representations)

Detecting input by the user of a signal specifying a value of one or more concepts or attributes <u>or</u> specifying a link (mapping rules) **between two or more concepts or attributes from the first and second representations;** (Column 3 Lines 15-21, discloses a user being able to define mapping rules)

Controlling the visual display unit to display to the user indications of the calculated logical implications of the specified values and links; (Column 3 Lines 15-21, discloses displaying to the user the results of a mapping)

Ng does not appear to explicitly disclose:

Calculating the logical implications of such specified values or links; generating a computer readable data file representative of said mapping or partial mapping which includes both values and/or links specified by said user and the logical implications thereof calculated in the calculating step.

Bernstein teaches:

Calculating the logical implications (similarity coefficient) **of such specified values or links;** (Paragraph [046], discloses calculating similarity coefficients based on the selected mapping rule) **generating a computer readable data file representative of said mapping or partial mapping which includes both values and/or links specified by said user and the logical implications thereof calculated in the calculating step.** (Paragraph [064], discloses creating a mapping between two models based on the relationship and similarity coefficient)

It would have been obvious for one of ordinary skill in the art at the time of the invention to combine the teachings of the cited references to implement **calculating the**

logical implications of such specified values or links; generating a computer

readable data file representative of said mapping or partial mapping which

includes both values and/or links specified by said user and the logical

implications thereof calculated in the calculating step because calculating a

similarity coefficient based on a plurality of techniques (Paragraph [026]) would make

the mapping highly accurate.

      With respect to claim 2:

      Bernstein teaches:

      Storing a plurality of program modules each of which performs one or

more logical implication calculations, and wherein the step of calculating logical

implications includes accessing and executing the stored program modules,

whereby the method may be easily improved by adding new program modules.

(Paragraph [026], discloses calculating the similarity coefficient based on a plurality of

techniques)

      With respect to claim 3:

      Bernstein teaches:

      One of the logical implications calculated is whether the types of two

attributes mapped together are the same <u>or</u> are convertible from one to another

by an already stored conversion function <u>or</u> whether the user needs to supply a

new suitable conversion function. (Paragraph [046], discloses that the similarity

coefficient calculates the similarity between two objects that are the same)

With respect to claim 4:

Bernstein teaches:

One of the logical implications calculated is whether a new linkage of two

attributes or concepts or a new assignment of a value to a concept or attribute is

logically inconsistent with any previously made linkages or assignments.

(Paragraph [060], discloses pruning the relationships based on the similarity coefficient)

With respect to claim 5:

Ng teaches:

Determining which concepts and attributes are not linked to other concepts

or attributes and are not assigned to a fixed value and marking these as requiring

user attention. (Column 4 Lines 58-63, discloses a user being able to manage the

attributes of fields requiring clarification)

With respect to claim 6:

Ng teaches:

Marking the mapping as complete once all concepts or attributes are

detected as being either linked to other concepts or attributes or as being

assigned to a fixed value or as having been assigned to an unmapped status by the user. (Column 4 Lines 58-63)

With respect to claim 7:

Ng teaches:

Controlling the visual display unit to display to the user indications of the automatically formed links. (Column 3 Lines 15-21, discloses displaying to the user the results of a mapping)

Bernstein teaches:

Comparing underlying attributes or sub-attributes of the linked concepts or attributes to one another in conjunction with associated mapping rules, the comparison including comparing the types of the underlying attributes or sub-attributes; (Paragraph [059]—[060], discloses comparing subtrees nodes to determine the similarity coefficient)

Automatically forming a link to the underlying attributes or sub-attributes determined to match according to the comparison step. (Paragraph [064], discloses forming mappings using the subtree nodes and the calculated similarity coefficient)

With respect to claim 8:

Bernstein teaches:

The comparison step attempts to find a match between the names of the underlying attributes or sub-attributes in conjunction mapping rules stored in association with each respective parent concept or attribute. (Paragraph [026], discloses comparing names)

With respect to claim 9:

Bernstein teaches:

If a match between the names of a pair of underlying attributes or sub-attributes is found, the comparison step further checks the types of the matched underlying attributes or sub-attributes and if the types are the same or of there is an appropriately associated conversion function available then it is determined that there is also a type match, but otherwise it is determined that there is a type-mismatch. (Paragraph [057]-[058], discloses checking and comparing subtree nodes to generate the similarity coefficient)

With respect to claim 10:

Bernstein teaches:

If a match between the names of a pair of underlying attributes or sub-attributes is found, the comparison further checks for consistency with previous mappings between concepts, attributes and sub-attributes and designates the linkage as either consistent or inconsistence in dependence on the result. (Paragraph [064])

With respect to claim 11:

Bernstein teaches:

If an automatically formed link is found to be consistent but to have a type mismatch, the linkage is automatically made but the display is caused to generate an indication that there is a mismatch. (Paragraph [054], discloses finding relationships and using the similarity coefficient to approve them)

With respect to claim 12:

Bernstein teaches:

If a link is found to be inconsistent it is not made. (Paragraph[064], discloses pruning the nodes for inconsistencies)

With respect to independent claim 13:

Ng teaches:

Apparatus for (the language "for generating" is considered intended use) **generating a computer readable data file representative of a mapping or partial mapping between a first and a second representation of a set of concepts and associated attributes, the apparatus comprising:**

A display driver for controlling (the language "for controlling" is considered intended use) **a video display unit** (user interface) **to display said first and second**

representations, or portions thereof, to a user; (Column 3 Lines 11-14 and Fig. 7,

discloses a user interface that displays data model representations)

An input interface for detecting (the language "for detecting" is considered

intended use) **input by the user of a signal specifying a value to be assigned to**

one or more concepts or attributes <u>or</u> specifying a link (mapping rules) **between**

two or more concepts or attributes from the first and second representations;

(Column 3 Lines 15-21, discloses a user being able to define mapping rules)

Said display driver is additionally operable to (the language "operable to" is

considered intended use) **control the visual display unit to display to the user**

indication of the calculated logical implications of the specified values and links.

(Column 3 Lines 15-21, discloses displaying to the user the results of a mapping)

Ng does not appear to explicitly disclose:

A processor for (the language "for calculating" is considered intended use)

calculating the logical implications of such specified values or links and for

generating (the language "for generating" is considered intended use) **a computer**

readable data file representative of said mapping or partial mapping which

includes both values and/or links specified by said user and the logical

implications thereof calculated in the calculating step.

Bernstein teaches:

A processor for calculating the logical implications (similarity coefficient) **of**

such specified values or links and (Paragraph [046], discloses calculating similarity

coefficients based on the selected mapping rule) **for generating a computer readable**

data file representative of said mapping or partial mapping which includes both

values and/or links specified by said user and the logical implications thereof

calculated in the calculating step. (Paragraph [064], discloses creating a mapping

between two models based on the relationship and similarity coefficient)

It would have been obvious for one of ordinary skill in the art at the time of the

invention to combine the teachings of the cited references to implement **a processor**

for calculating the logical implications of such specified values or links; and for

generating a computer readable data file representative of said mapping or partial

mapping which includes both values and/or links specified by said user and the

logical implications thereof calculated in the calculating step because calculating a

similarity coefficient based on a plurality of techniques (Paragraph [026]) would make

the mapping highly accurate.

With respect to claim 14:

Ng teaches:

Controlling the visual display unit to display to the user indications of the

automatically formed links. (Column 3 Lines 15-21, discloses displaying to the user

the results of a mapping)

Bernstein teaches:

Comparing underlying attributes or sub-attributes of the linked concepts or

attributes to one another in conjunction with associated mapping rules, the

comparison including comparing the types of the underlying attributes or sub-

attributes; (Paragraph [059]—[060], discloses comparing subtrees nodes to determine

the similarity coefficient)

Automatically forming a link to the underlying attributes or sub-attributes

determined to match according to the comparison step. (Paragraph [064],

discloses forming mappings using the subtree nodes and the calculated similarity

coefficient)

With respect to claim 15:

Bernstein teaches:

An electronic data store for storing the mapping or partial mapping

generated by said processor. (Paragraph [064])

With respect to claim 16:

A computer program or programs arranged such that while it or they are

executed on a computer it or they cause the computer to carry out the method of

claim 1. (See claim 1 rejection)

With respect to claim 17:

A computer readable carrier medium carrying the computer program or

programs of claim 16. (See claim 1 rejection)

Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Mariela D. Reyes whose telephone number is (571) 270-1006. The examiner can normally be reached on M - F 7:30- 5:00 East time.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, John Cottingham can be reached on (571) 272-7079. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/John R. Cottingham/
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October 15, 2009